

Appl. No. : 10/644,690
Filed : August 19, 2003

REMARKS

After entry of the foregoing amendments, claims 1-23 are pending in the application and are presented for reconsideration and further examination in view of the foregoing amendments and the following remarks. By the foregoing amendments, claims 1 and 6 have been amended and new claims 10-23 have been added.

Rejections Under § 102 or § 103

In the Office Action, claims 1-4, 6 and 9 were rejected under 35 U.S.C. § 102(e) as being anticipated by Tayanaka (U.S. Patent No. 6,194,245) or, in the alternative, under § 103 as being obvious over Tayanaka in view of Mimura (U.S. Patent No. 5,285,078). Applicant reserves the right to challenge whether Tayanaka is available as prior art against the present application.

In the Office Action, Tayanaka was pointed to as teaching a method for fabricating a thin-film, opto-electronic device, including forming a sequence of layers such that optical confinement is realized in a device. Light confinement is described in the present application, for example, as being achieved by a material which has "both light reflecting and light diffusing properties thereby giving rise to light confinement in the thin film." Application, page 4, lines 14-16. However, Applicant respectfully submits that Tayanaka does not teach or suggest a method of forming the claimed sequence of layers which realizes optical confinement. First, Applicant notes that the term "optical confinement" appears nowhere in Tayanaka. Secondly, nowhere in Tayanaka is light reflection or light diffusion described as being achieved by the sequence of layers.

Amended claim 1 defines a method which comprises, *inter alia*, forming a porous silicon layer on the substrate having a thickness in the range from 0.1 μm to 1 μm such that the porous layer acts as a light diffuser and as a light reflector. Nowhere does Tayanaka teach or suggest such a method including such a step. Fundamentally, Tayanaka appears to use the porous silicon layer 12 as a sacrificial layer which allows the semiconductor film to be peeled or separated from the semiconductor substrate. See, for example, Tayanaka, column 5, lines 50-59, column 6, lines 12-15; and Figures 3C, 5B, 7B, 8E, 10D, 14A, 16B and 19B. Because the purpose of porous layer 12 in Tayanaka is to be a sacrificial layer which allows separation of the film from the substrate, Tayanaka appears to use a much thicker porous layer than set forth in amended claim 1.

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Mimura provides no teaching or suggestion to overcome the shortcomings of Tayanaka. In fact, Applicant respectfully submits that Mimura and Tayanaka cannot properly be combined as the basis for rejection in the present application. The porous layer 103 of Mimura identified in the Office Action, Figure 23, layer 616, is not a sacrificial layer. Therefore, attempting to combine Mimura with Tayanaka would result in the non-sacrificial porous layer of Mimura being destroyed thereby rendering the device of Mimura inoperative.

Therefore, Applicant respectfully submits that claim 1 and dependent claims 2-10, which depend therefrom, are patentable over the references of record.

Allowable Subject Matter

In the Office Action, it was indicated that claims 7-8 contain allowable subject matter. New independent claim 11 represents claim 7 rewritten in independent form including all of the limitations of the base claim. Therefore, Applicant respectfully submits that claims 11-18 are in condition for allowance.

Newly added independent claim 19 is similar to claim 7 in that it includes the step of forming conductive connections between the substrate and the first region of the semiconductor layer. Of course, Tayanaka would not have any such teaching or suggestion because Tayanaka sacrifices the porous layer, when the film is separated from the substrate therefore forming a connection to the substrate would be illogical. Therefore, Applicant respectfully submits that claims 19-23 are allowable for the same reasons as claim 7 (rewritten in independent form as new claim 11).

CONCLUSION

Applicant has endeavored to address all of the Examiner's concerns as expressed in the outstanding Office Action. Accordingly, amendments to the claims, the reasons therefore, and arguments in support of the patentability of the pending claim set are presented above. Any claim amendments which are not specifically discussed in the above remarks are made in order to improve the clarity of claim language, to correct grammatical mistakes or ambiguities, and to otherwise improve the capacity of the claims to particularly and distinctly point out the invention to those of skill in the art. In light of the above amendments and remarks, reconsideration and withdrawal of the outstanding rejections is specifically requested. If the Examiner finds any

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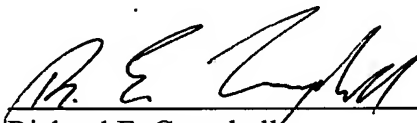
remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, the Examiner is respectfully requested to initiate the same with the undersigned.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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Dated: 10/1/04

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